Borui Wang

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Passionate PhD student in Information Science working in Architectural Robotics Lab at Cornell University. Experienced in blending human-centered design with emerging technologies to create interactive installations and experiences. Previous research and development background from the University of Washington (B.S. in HCDE). Combines creative vision with technical expertise in physical computing and interactive media. Strong self-learning and communication ability.

Education

Cornell University | PhD in Information Science

2024+ | Information Science

Advised by Professor Keith Evan Green in the Architectural Robotics Lab

Explores how physical computing and interactive media can deepen our connection to environments and each other, creating meaningful, innovative solutions.

University of Washington | Bachelor of Science

2020-2024 | Human-Centered Design & Engineering

GPA:3.96

Dean's List: Autumn 2020–Spring 2021, Autumn 2022–Spring 2024

Experience

U Compass | Individual Design Project

Aug. 2024 – Sep. 2024 | Ithaca, NY

Designed and developed a spatial reminder device inspired by the ancient Chinese compass.

Used Arduino, servo motors, and light sensors to create tactile and auditory feedback for task reminders.

Focused on human-centered design principles to enhance spatial memory and reduce forgetfulness.

iContour @ UC San Diego | Research

Jun. 2022 – Mar. 2025 | Remote & La Jolla, CA

Redesigned and implemented a new interface for a radiologist training web-app. Contributed to the back-end server written in Python, designed and developed WEB-APIs for it. Collected and validated data for several nation-wide user studies in collaboration with UCSD School of Medicine.

Collaborated and resulted in several publications.

UW Medicine Find a Location Redesign | Capstone Project

Jan. 2024 – Jun. 2024 | Seattle, WA

Collaborated with a team of four to redesign UW Medicine's location finder system serving 4 hospitals and 300+ clinics.

Implemented human-centered design methodologies through a structured process of competitive analysis, field studies, user testing, information architecture planning, and iterative prototyping.

Delivered three key solutions: a plain language search system to reduce barriers to care, an improved map search interface for better location context, and customizable location page templates for different facility types.

Obsolete Obsolescence | Individual Design Project

Jan. 2024 – Mar. 2024 | Seattle, WA

Transformed a discarded VHS machine into an interactive robot using Arduino, exploring themes of obsolescence, sentience, and hope in technology.

Designed robot behaviors around three concepts: "obsolete" (performing routine tasks when alone), "sentient" (responding to human presence), and "hope" (offering a CD as something "advanced").

RetroConnect | Individual Design Project

Sep. 2024 – Dec. 2024 | Seattle, WA

Repurposed a vintage telephone into an IoT device that connects to the internet, exploring the evolution of connectivity technology.

Engineered the system using Arduino, ESP8266 WiFi module, and a 1602 LCD screen to allow users to input URLs via the original keypad and display website content.

Created an interactive experience where audio beeps correspond to site loading delays, bridging past and present technologies while revealing invisible data flows.

Smart Volume Knob | Individual Project

Jan. 2023 – Mar. 2023 | Seattle, WA

Designed and built a smart knob device that controls PC volume and media playback using Arduino Pro Micro, OLED display, and rotary encoder

Created a fully custom PCB from scratch using photosensitive etching process, handling circuit design and soldering all components

Developed both Arduino firmware and Python companion software to enable real-time communication between the hardware device and computer's audio system, allowing synchronized volume control and media commands

UrPlan | Group Project

Oct. 2022-Dec. 2022 | Seattle, WA

Designed and prototyped a event finding and planning website with Figma. Design process include user research, brainstorming, evaluation, and Rapid Iterative Testing and Evaluation (RITE).

MyPlan Redesign | Individual Project

Mar. 2022-May. 2022 | Seattle, WA

Redesigned the current course registration system of UW, giving it a cleaner and more aesthetically appealing design.

Impressionify | Individual Project

Oct. 2021-Dec. 2021 | Seattle, WA

Designed and built a responsive website using Python, JavaScript, HTML, and CSS. Users upload photos, website generates impressionism style images.

Publications

Yarmand, M., Chen, C., Sherer, M. V., Shah, Y. N., Liu, P., **Wang, B.**, Hernandez, L., Murphy, J. D., & Weibel, N. (2024). Enhancing Accuracy, Time Spent, and Ubiquity in Critical Healthcare Delineation via Cross-Device Contouring. *Proceedings of the 2024 ACM Designing Interactive Systems Conference (DIS '24)*, 905–919. https://doi.org/10.1145/3643834.3660718

Yarmand, M., **Wang, B.**, Chen, C., Sherer, M., Hernandez, L., Murphy, J., & Weibel, N. (2023). Design and development of a training and immediate feedback tool to support Healthcare Apprenticeship. **Extended Abstracts of the 2023 CHI Conference** on Human Factors in Computing Systems. https://doi.org/10.1145/3544549.3585894

Cheng, K., Yarmand, M., Sherer, M., Chen, C., **Wang, B.**, Weibel, N., Murphy, J. Design-thinking Workshops and Survey to Assess Approaches for Contouring Feedback Exchange in Radiation Oncology. The 2023 Radiation Oncology Summit (ACRO), Lake Buena Vista, FL

Orr, M., Dornisch, A., Duran, E., Yarmand, M., **Wang, B.**, Weibel, N., Gillespie, E., Murphy, J., and Sherer, M. Results From a Multi-Institutional Pilot Study of iContour, an Interactive Online Platform with Real-Time Feedback to Improve Contouring Education for Radiation Oncology Residents. American Society for Therapeutic Radiology and Oncology (ASTRO 2023) https://doi.org/10.1016/j.ijrobp.2023.06.1825

Hu, F. Y., **Wang, B. R.**, & Zhang, H. X. (2021). Design and module simulation of a smart parking system based on QR code and drone monitoring for open-space temporary parking lots. 2021 IEEE International Conference on Consumer Electronics and Computer Engineering (ICCECE). https://doi.org/10.1109/iccece51280.2021.9342550

Wang, B., & Li, M. (2021). A structure to effectively prepare the data for sliding window in deep learning. 2021 IEEE 6th International Conference on Signal and Image Processing (ICSIP). https://doi.org/10.1109/icsip52628.2021.9688916

Teaching Experience

Spring 2025 | INFO 4340 App Design and Prototyping

Head TA of a team of 5 TAs. Manage office hours for other TAs, grade assignments weekly, regularly monitor course discussion forum and course email to answer questions and handle regrade requests. In-class, assist students in learning web developing frameworks like Vue.js and bootstrap, and basic app design principles. Hold weekly office hours to help students create high-fidelity interactive prototypes, master event-driven programming, and get used to Git workflows, command-line basics, and debugging skills to prepare them for a future professional environment.

Fall 2024 | INFO 4320 Introduction to Rapid Prototyping and Physical Computing

Host weekly office hours to teach rapid prototyping (laser cutting, 3D printing, Arduino, basic mechanical design). Mentor student team on semester long projects like sport bot, 2D drawing machine, and accessible physical interface. Grade assignments bi-weekly and prepare hardware kits for hands-on learning.